

Claims

- 1 1. Circuit arrangement comprising:
 - 2 - a power section, which comprises heat-generating components and at least
 - 3 one component producing less heat,
 - 4 - the component producing less heat being arranged in an internal region of the
 - 5 circuit arrangement, and
 - 6 - the heat-generating components being arranged around the internal region and
 - 7 being mounted on at least one metallic body acting as an electrical conductor,
 - 8 said body being electrically connected to the heat-generating components,
 - 9 wherein
 - 10 - the body is arranged in an electrically insulating manner in the region of the
 - 11 heat-generating components on a heat sink, in order to cool the heat-
 - 12 generating components, and wherein
 - 13 - the heat sink is embodied running around the internal region with the
 - 14 components producing less heat.
- 1 2. Circuit arrangement according to Claim 1, further comprising:
 - 2 - a logic section, which is arranged above the internal region,
 - 3 - wherein the logic section being electrically connected to the power section via
 - 4 bonding connections.
- 1 3. Circuit arrangement according to Claim 2, further comprising:
 - 2 - a metallic board, which covers the internal region and is arranged above the
 - 3 component producing less heat,
 - 4 - wherein the board having at least one opening above the internal region and
 - 5 the component producing less heat being electrically connected to the board
 - 6 via a first wired bond, which is led through the opening,
 - 7 - a carrier, which is arranged in an electrically insulating manner above the
 - 8 internal region and above the board,

- 9 - wherein the surface of the carrier facing the board having an indentation in the
10 region of the first wired bond, to accommodate the first wired bond,
11 - wherein the surface of the carrier facing away from the board being
12 essentially flat, and
13 - wherein the logic section being arranged in an electrically insulating manner
14 on the surface of the carrier facing away from the board.
- 1 4. Circuit arrangement according to Claim 3,
2 - wherein the carrier being essentially made of aluminum.
- 1 5. Circuit arrangement according to Claim 1, further comprising:
2 - a metallic board, which covers the internal region and is arranged above the
3 component producing less heat,
4 wherein
5 - the board comprising at least one opening above the internal region,
6 - the component producing less heat being embodied as a capacitor and being
7 electrically connected to the board via a first wired bond, which is led through
8 the opening,
9 - the heat-generating components being embodied as bare first chips and
10 second chips, each containing a transistor, with the first chips being mounted
11 on at least one first metallic body and the second chips being mounted on a
12 second metallic body,
13 - the first body being embodied as a bar, which runs along the outer edge of the
14 heat sink,
15 - the second body being embodied as a board, which covers the internal region
16 and inner edge of the heat sink,
17 - the board being arranged in an electrically insulating manner on the second
18 body,

- 19 - the second body having a first opening above the internal region, which is
- 20 arranged under the opening of the board and through which the first wired
- 21 bond is led,
- 22 - the second body having at least one second opening above the internal region,
- 23 - the component producing less heat being electrically connected to the second
- 24 body via a second wired bond, which is led through the second opening,
- 25 - the first chips being electrically connected to the board via bonding
- 26 connections, and
- 27 - the second chips being electrically connected to the first body via bonding
- 28 connections.

- 1 6. Circuit arrangement according to Claim 2, further comprising:
- 2 - a metallic board, which covers the internal region and is arranged above the
- 3 component producing less heat,
- 4 wherein
- 5 - the board comprising at least one opening above the internal region,
- 6 - the component producing less heat being embodied as a capacitor and being
- 7 electrically connected to the board via a first wired bond, which is led through
- 8 the opening,
- 9 - the heat-generating components being embodied as bare first chips and
- 10 second chips, each containing a transistor, with the first chips being mounted
- 11 on at least one first metallic body and the second chips being mounted on a
- 12 second metallic body,
- 13 - the first body being embodied as a bar, which runs along the outer edge of the
- 14 heat sink,
- 15 - the second body being embodied as a board, which covers the internal region
- 16 and inner edge of the heat sink,
- 17 - the board being arranged in an electrically insulating manner on the second
- 18 body,

- 19 - the second body having a first opening above the internal region, which is
 - 20 arranged under the opening of the board and through which the first wired
 - 21 bond is led,
 - 22 - the second body having at least one second opening above the internal region,
 - 23 - the component producing less heat being electrically connected to the second
 - 24 body via a second wired bond, which is led through the second opening,
 - 25 - the first chips being electrically connected to the board via bonding
 - 26 connections, and
 - 27 - the second chips being electrically connected to the first body via bonding
 - 28 connections.
- 1 7. Circuit arrangement according to Claim 3, further comprising:
- 2 - a metallic board, which covers the internal region and is arranged above the
 - 3 component producing less heat,
 - 4 wherein
 - 5 - the board comprising at least one opening above the internal region,
 - 6 - the component producing less heat being embodied as a capacitor and being
 - 7 electrically connected to the board via a first wired bond, which is led through
 - 8 the opening,
 - 9 - the heat-generating components being embodied as bare first chips and
 - 10 second chips, each containing a transistor, with the first chips being mounted
 - 11 on at least one first metallic body and the second chips being mounted on a
 - 12 second metallic body,
 - 13 - the first body being embodied as a bar, which runs along the outer edge of the
 - 14 heat sink,
 - 15 - the second body being embodied as a board, which covers the internal region
 - 16 and inner edge of the heat sink,
 - 17 - the board being arranged in an electrically insulating manner on the second
 - 18 body,

- 19 - the second body having a first opening above the internal region, which is
20 arranged under the opening of the board and through which the first wired
21 bond is led,
- 22 - the second body having at least one second opening above the internal region,
- 23 - the component producing less heat being electrically connected to the second
24 body via a second wired bond, which is led through the second opening,
- 25 - the first chips being electrically connected to the board via bonding
26 connections, and
- 27 - the second chips being electrically connected to the first body via bonding
28 connections.

- 1 8. Circuit arrangement according to Claim 4, further comprising:
2 - a metallic board, which covers the internal region and is arranged above the
3 component producing less heat,
4 wherein
- 5 - the board comprising at least one opening above the internal region,
- 6 - the component producing less heat being embodied as a capacitor and being
7 electrically connected to the board via a first wired bond, which is led through
8 the opening,
- 9 - the heat-generating components being embodied as bare first chips and
10 second chips, each containing a transistor, with the first chips being mounted
11 on at least one first metallic body and the second chips being mounted on a
12 second metallic body,
- 13 - the first body being embodied as a bar, which runs along the outer edge of the
14 heat sink,
- 15 - the second body being embodied as a board, which covers the internal region
16 and inner edge of the heat sink,
- 17 - the board being arranged in an electrically insulating manner on the second
18 body,

- 19 - the second body having a first opening above the internal region, which is
 - 20 arranged under the opening of the board and through which the first wired
 - 21 bond is led,
 - 22 - the second body having at least one second opening above the internal region,
 - 23 - the component producing less heat being electrically connected to the second
 - 24 body via a second wired bond, which is led through the second opening,
 - 25 - the first chips being electrically connected to the board via bonding
 - 26 connections, and
 - 27 - the second chips being electrically connected to the first body via bonding
 - 28 connections.
- 1 9. Circuit arrangement according to Claim 5,
- 2 - wherein the first body, second body and board being essentially made of
- 3 copper.